PATENT SPECIFICATION 1,091,012

NO DRAWINGS.

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COMPLETE SPECIFICATION.

Improvements in and relating to the Soil-Proofing of Carpets.

We, V. G. PROCESSES LIMITED, a British Company, of 17 Bedford Row, London, W.C.1, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to the treatment of carpets for imparting thereto, resistance to soiling.

According to this invention, a carpet having a pile comprising cotton, rayon or wool has a substantial degree of resistance to soiling imparted to it, by treating the same with a water-repellent organic polysiloxane having an affinity for cellulosic fibres, in solution in a volatile organic solvent.

Suitable organic polysiloxanes, often loosely referred to as silicones, are well known. It will be appreciated that "silicones" take many different forms and are prepared having different constitutions appropriate to different applications. For example, there are the silicones which are generally dimethyl polysiloxanes used for the suppression of foam in water; other silicones have been developed for application to masonry, and yet others have been developed having water-repellent properties and an affinity for cellulosic and many other fibres including silk and polyamide and polyester fibres. It is with the latter silicones that the present application is concerned; suitable materials are described in Patent Specifications Nos. 708,821 and 723,989. A well known formulation made in accordance therewith, which is commercially available, is MS2202 made by Midland Silicones Limited. This as sold contains about 50% of the silicone in a volatile organic solvent.

It is found that when for example MS2202 is applied to a pile carpet having a pile of cotton or rayon or wool, or mixtures thereof, especially one comprising a major proportion of viscose, not only is a degree of water-repellency imparted but also an important degree of soil resistance.

The silicone will be applied to the carpet in a diluted condition, suitably using a volatile aliphatic, aromatic or chlorinated hydrocarbon solvent. Suitably, ½—5% by weight of the silicone is applied to the carpet pile based on the weight of the pile; this may be accomplished most conveniently by spraying or brushing, as dipping, padding, or mangling techniques will generally cause too much of the silicone to be taken up at the back of the carpet and in any for example spongy backing which may be provided, thus being wasted, or even damaging the backing. A preferred treatment involves the application of $^1/_8$—1 oz. of polysiloxane solution per square yard of the pile.

According to a further feature of the invention, a still greater degree of improvement in the handle and wear resistance and also in the pile resiliency (crush resistance) can be obtained if the carpet is also treated with a dilute solution of a film-forming polyvinyl or polyurethane resin, especially a vinyl chloride-vinyl acetate copolymer. Especially suitable are those vinyl resins, generally vinyl choride-vinyl acetate copolymers, prepared for cocooning objects by spraying. The resin is of course applied in a sufficiently dilute solution to avoid agglomeration of the strands constituting the pile.

Conveniently, the polysiloxane and the polyvinyl resin are applied simultaneously using a compatible solvent such as a volatile ketone. Acetone can be applied but is rather inconveniently volatile; methyl ethyl ketone, methyl isopropyl ketone and methyl isobutyl ketone are the most suitable.

[*Price 4s. 6d.*]

Generally, the polyvinyl resin will be associated with plasticisers, although an internally plasticised resin may be used. The plasticisers should have low volatility.

In an example, 10 parts of methyl isobutyl ketone had added to them 1 part of the silicone oil MS2202 (about 50% silicone) and 2 parts of "Plastic 18" sold by R. A. Brand & Company. "Plastic 18" is understood to be a vinyl chloride-acetate copolymer with dioctyl phthalate and dibutyl sebacate plasticisers and with a solids content of about 28%. The resulting dilute solution was sprayed on to the pile of a viscose pile carpet (the viscose being that sold under the Registered Trade Mark Evlan) so as to thoroughly wet the pile without causing any liquid to drip through. The pile was then permitted to dry, when its soil repellency, water repellency, resiliency and wear resistance were all found to be enormously enhanced.

In another example, a similar carpet was sprayed at a rate of 9 oz./sq. yard with a solution of 1 part of MS2202 in 8 parts of white spirit. Upon drying out, the water repellency, soil repellency, resiliency and wear resistance were found to be greatly enhanced, these improved properties persisting for more than a year with little diminution.

WHAT WE CLAIM IS:—

1. A process of treating a pile carpet having a pile comprising cotton, rayon or wool, which comprises applying to the pile a solution of a water-repellent organic polysiloxane having an affinity for cellulosic fibres, in a volatile organic solvent.

2. A process according to claim 1, in which the pile comprises a major proportion of viscose.

3. A process according to claim 1 or 2 in which from 1/5th to 1oz. per sq. yard of the solution is applied to the pile.

4. A process according to claim 1, 2 or 3 in which a film-forming polyvinyl or polyurethane resin is applied with the polysiloxane.

5. A process of treating a carpet substantially as described in either of the foregoing examples.

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Agents for the Applicants.

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